



Model 602A \$290



Model 602A with full rack width option



Models 602A and 610A combined by dual unit adapter kit.

New ELGENCO 3 BAND 5 cps to 5 mc RANDOM NOISE GENERATOR

- ☐ Non Clipped Waveform
- ☐ Constant Output Impedance
- ☐ Improved Waveform Symmetry
- ☐ All Solid State
- ☐ \$290

NEW ENGLAND—TECHNICAL INSTRUMENTS, INC.: BOSTON AREA-(617) 944-3930, 122 West Street, Wilmington, Massachusetts; BRIDGEPORT-(203) 368-4582, 575 Broad Street • **ATLANTIC**—G. CURTIS ENGEL AND ASSOCIATES, INC.: PO Box 569, Ridgewood, New Jersey, (201) Gl 4-1400; NEW YORK CITY-(212) RE 2-0001; PHILADELPHIA-(215) WA 2-3270 • **SOUTHERN**—MITCHELL SPEARS COMPANY: DALLAS-(214) TA 3-3013; FORT WORTH-(817) WA 3-4657, 4944 James Avenue; HOUSTON-(713) WA 3-7616, Houston Petroleum Center; NEW ORLEANS-Operator WX 3161 • **CENTRAL**—M. P. ODELL COMPANY: CLEVELAND AREA-(216) 871-8000, 26614 Center Ridge Road, Westlake, Ohio; DAYTON-(513) 298-9964, 1250 West Dorothy Lane; DETROIT-(313) 838-7324, 14027 Puritan Avenue; PITTSBURGH-(412) 371-1231, PO Box 10595. **NORTHPORT ENGINEERING, INC.:** ST. PAUL-(612) 698-3841, 2027 Grand Avenue • **WESTERN**—V. T. RUPP COMPANY: ALBUQUERQUE-(505) 298-5589, 9611 Acoma Road, S.E.; LOS ANGELES-(213) DU 7-8224, 307 Parkman Avenue; PHOENIX-(602) 947-2071; SAN DIEGO-(714) CY 8-9835, 3445 5th Avenue; SAN FRANCISCO AREA-(415) 948-1483, 1182 Los Altos Avenue, Los Altos. **SHOWALTER-JUDD, INC.:** SEATTLE-(206) 998-0323, 1806 South Bush Place • **CANADA**—ALLEN CRAWFORD ASSOCIATES, LTD.: 65 Martin Ross Avenue, Downsview, Ontario; MONTREAL-(514) RE 9-6776; OTTAWA-(613) PA 5-1288; TORONTO-(416) 255-7771 • **INTERNATIONAL DIVISION:** 750 3rd Avenue, New York, N.Y.

Tear along perforation—fill in reverse side and mail for further information

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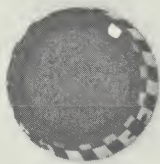
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1550 EUCLID STREET

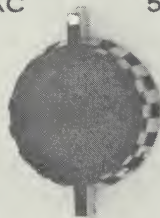
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AMPLITUDE

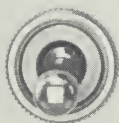


RANGE

20 KC 500 KC 5 MC



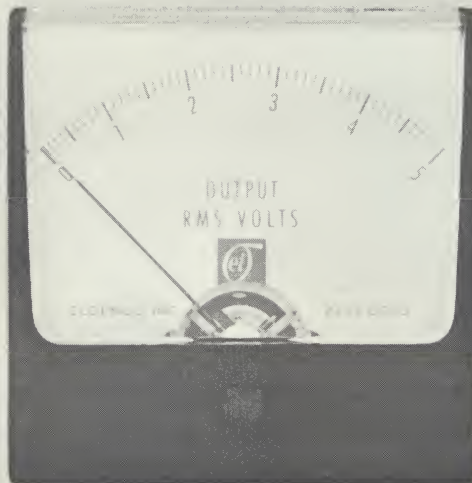
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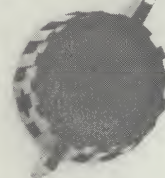


LINE



ATTENUATOR

X.0001 X.001 X.01 X.1 X1.0



OUTPUT

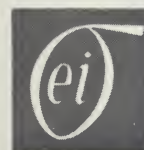


ELGENCO INC.

SANTA MONICA, CALIFORNIA

MODEL 602A

GAUSSIAN NOISE GENERATOR



ELGENCO, INCORPORATED

1550 EUCLID STREET
SANTA MONICA, CALIFORNIA

Bulk Rate

U.S. Postage

PAID

Santa Monica, Calif.

Permit No. 588

☐ Please send me technical information
on the Model 602A Noise Generator.

☐ Please have my Elgenco Field Engi-
neer call me at this telephone number
_____ to arrange a
demonstration.

☐ Please correct my address. I have
noted the corrections on my old
address.

MR. T. NELSON
SYSTEMS CONSULTANT
BOX 32
SCHOOLEYS MTN., NEW JERSEY
07870



statistical instruments for industry



MODEL 311A

GAUSSIAN NOISE GENERATOR

In the analysis and synthesis of complex guidance, control and communication systems it is often necessary to determine the effects of noise signals on system performance. The complexity of modern systems and the nature of their stringent performance requirements necessitate that more and more consideration be given to system operation in response to statistical inputs.

Many performance inaccuracies are essentially random functions of time and they cannot be prescribed a priori except in a general statistical sense. For example, the position of a target indicated by a radar set contains components of noise which vary with time in an unpredictable way; also, as a result of manufacturing tolerances in a system, the sensitivities and other fixed parameters of operating components are subject to variations, either in the form of slight fluctuations with time or in the form of variations from one system to another; also, an automatic control system is seldom designed to perform a single task which may be completely specified beforehand but it is designed to perform a task selected at random from a complete repertory of possible tasks. In general, every phenomena which is not amenable to exact a priori specification becomes the proper subject for study by the methods of statistical reasoning.

The Model 311A Noise Generator was designed to fill the need for a precise general purpose instrument which can accurately simulate various random quantities under study. It supplies two gaussian noise voltages with precisely controlled "white" power frequency spectra; one output has a spectral characteristic covering the range from 10 to 20,000 cps (or higher) and the other output covers the range from 0 to 40 cps. These characteristics make the Model 311A especially useful when used in conjunction with analog computers with a repetitive or iterative mode.

The basic noise source of the Model 311A is a gas tube in a transverse magnetic field. The magnetic field eliminates plasma oscillations which are generated by a gas discharge and thereby helps to insure the randomness of the amplitude distribution and the uniformity of the power spectrum. The output from the gas tube is fed into a shaping amplifier which equalizes the noise tube characteristics. The noise is then passed through a precision regulator circuit which continuously stabilizes its output against a zener reference voltage. The resulting noise voltage is passed through an attenuator and amplifier whose output has a constant noise spectrum from 10 to 20,000 cps.

The output from the regulator is also filtered by a precision network resulting in a band of noise centered about a frequency f_0 . After amplification by a variable gain feedback amplifier, the noise is phase-detected by a solid state chopper operating at f_0 cps. A low-pass filter removes the high frequency components arising from the detection process. The result is a low frequency noise voltage whose spectral density is constant from 0 to 40 cps.

E L G E N C O I N C O R P O R A T E D
1550 EUCLID STREET • SANTA MONICA, CALIFORNIA 90404 • (213) 451-1635

SPECIFICATIONS

LOW FREQUENCY OUTPUT

AMPLITUDE PROBABILITY DISTRIBUTION:

Gaussian (Normal) to plus or minus one percent.

OUTPUT SPECTRUM:

Uniform (constant) to plus or minus 0.1 db from 0 to 35 cps. Output falls off rapidly above 40 cps.

MAXIMUM OUTPUT LEVEL:

12 volts RMS into a 1 megohm input resistance. A dynamic range of 5 to 1 peak-to-RMS value is provided.

MAXIMUM SPECTRAL DENSITY:

Approximately 2.5 (volts)^2 per cps.

D. C. UNBALANCE:

Less than 50 millivolts, with 95% certainty.

HIGH FREQUENCY OUTPUT

AMPLITUDE PROBABILITY DISTRIBUTION:

Gaussian (Normal) to plus or minus two percent with zero mean.

OUTPUT SPECTRUM:

Uniform to plus or minus 0.5 db from 10 to 20,000 cps (can also be supplied with uniformity up to 50,000 cps).

MAXIMUM OUTPUT LEVEL:

15 volts RMS.

MAXIMUM SPECTRAL DENSITY:

Approximately $7.5 \times 10^{-3} \text{ (volts)}^2$ per cps.

OUTPUT LOAD:

Minimum 100,000 ohms.

POWER SUPPLY

Built-in highly regulated plate and filament voltage supplies.

POWER REQUIREMENTS

115v plus or minus 10v, 50/60 cycles AC at 90 watts.

COLOR

Rack panel is flat grey.

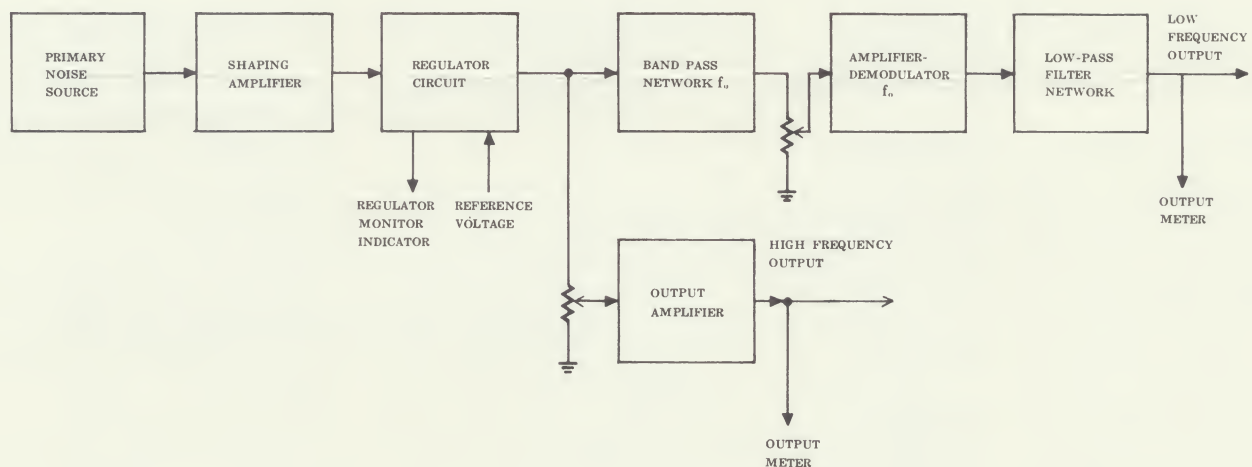
MOUNTING

Mounted on standard relay rack panel 7" high x 19" wide; Model 311A is 15" deep. Can be supplied in deluxe cabinet.

SHIPPING WEIGHT

Approximately 45 lbs.

BLOCK DIAGRAM OF MODEL 311A GAUSSIAN NOISE GENERATOR



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statistical instruments for industry

NOISE GENERATOR PRICE LIST

May 1, 1965

General Purpose Solid State Noise Generator

Model 602A 20 cps to 5 mc (cabinet)	\$290.00
Model 603A 20 cps to 5 mc (cabinet)	\$495.00
Model 610A 10 cps to 5 mc (cabinet)	\$1,175.00

Options Available For the Above Solid State Instruments

1. Rechargeable battery	Add	\$135.00
2. Full rack width cabinet and rack mounting hardware	Add	\$30.00

Accessories Available For the Above Solid State Instruments

1. Adaptor kit - Dual unit and rack mounting hardware	\$7.00
2. Adaptor kit - Single unit rack mounting	\$56.00
3. Rechargeable battery kit	\$145.00

General Purpose Tube Type Noise Generators

Model 331A 10 cps to 20 kc (rack mounted)	\$1,295.00
Model 331A-23 10 cps to 2 kc (rack mounted)	\$1,395.00
Model 331A-53 10 cps to 5 kc (rack mounted)	\$1,395.00
Model 331A-54 10 cps to 50 kc (rack mounted)	\$1,395.00
Model 331A-25 10 cps to 200 kc (rack mounted)	\$1,495.00
Model 331A-55 10 cps to 500 kc (rack mounted)	\$1,645.00

Low Frequency Tube Type Noise Generators

Model 301A DC to 40 cps (rack mounted)	\$1,995.00
Model 311A Dual Output DC to 40 cps, 10 cps to 20 kc (rack mounted)	\$2,395.00
Model 312A Dual Output DC to 120 cps, 10 cps to 20 kc (rack mounted)	\$2,495.00
Model 321A DC to 120 cps (rack mounted)	\$2,095.00

Deluxe cabinet for tube type Noise Generators	Add	\$48.00
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PRICES

All prices are net with no discounts. Prices are FOB our plant and are exclusive of all taxes now in effect or that may be imposed hereafter by federal, state, or local governments. Prices given are subject to change without notice. Formal price quotations remain in effect for 30 days in the United States and Canada, 60 days in other areas.

SOURCE INSPECTION SURCHARGE

A surcharge of 1 per cent (\$2.50 minimum) applies on all orders requiring inspection at our plant either by one of the government services or by the customer's own inspection department or other private agency. The inspection surcharge applies on each shipment inspected.

TERMS

For customers in the United States and Canada, terms are net 30 days if credit has been arranged; otherwise, unless payment is received before shipment, shipment will be made COD. For customers outside the United States and Canada, terms are confirmed irrevocable letter of credit or cash in advance.

CONDITIONS OF SALE

Determination of prices, terms, and conditions of sale and final acceptance of orders are made only at our plant.

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